Annex 4 - Target group Survey Summary Report Template – WP2

ITFARM

IT for Interconnection of Social, Economic and Environmental Aspects in Agribusiness

WP2 – Survey on the ICT Technologies supplied in precision agriculture

(Please provide together with English questionnaire responded, your findings from the Survey by 1st June 2022 by summarising the feedback from the questionnaires in the following structure using the following formatting: Font Calibri, Font size: 12).

Part 1. Introduction and profile of the participants (Questions in the part: "Enterprise information")

The amount of participants to this survey was three Greek companies in the sector of ICT technologies. These companies are represented in more details, below.

1. **Agrostis – Agricultural information systems**
   Agrostis, founded in 2012, is an Agro-Technology company based in Thessaloniki, Greece. The company develops and markets software and automation solutions exclusively focused on the agricultural sector. Agrostis combines unique know-how and expertise in the fields of Agricultural science and Information Technology and is staffed by experienced executives and highly trained staff. In 2014, Agrostis introduced to the Greek market the first Farm Management Information System (FMIS), **ifarma**, which remains since its core and flagship product. ifarma, is now a well-known trademark and is recognized as the best farm management software for agricultural holdings in Greece. The company now offers as set of digital farming products and services supporting Farming as a Service.

2. **IONOS – trador UAV-based Precision Farming solutions**

   Ionos trades agricultural drones and develops parts of drones and their software. Focusing on precision covering spraying, spot spraying yield, and crop index monitoring, disease, and parasites detection, our team trains pilots on drone spraying operations according to the needs of each crop. IONOS' team has extensive experience and knowledge in drone piloting, especially in the agri-food sector, working on Greek agricultural landscape full different terrains from flat inclined to mountains, from dry rocky areas to islands.

3. ZEN AGROPC – Agriculture information systems

ZenAgroPc was founded in 2018 with main objectives the digital transformation, the adaptation to precision agriculture and the provision of advisory services to agricultural holdings.

The company has developed software for precision irrigation, providing specific advices for irrigation for the all kind of crops (trees, vegetables, row crops, etc). The information is specialized for each parcel and is communicated via SMS and e-mail to the producer or directly to automatic electro valves with water-meter.

The development of software has been based on research results and methodologies proposed by FAO. Precision irrigation is already applied successfully in 6 cooperatives growing olives under conventional and biological pattern. With high reputation scientific partners from agricultural research, mechanical engineers scientists of Information technology and Communication.

Part 2. Results

Result 1. Current situation of ICT agro-Techno input suppliers (Questions in the part "Enterprise current situation" Q1-Q10)

Two out of the three companies, Agrostis and ZenAgropc are service provider and the third one Ianos is distributor. Respectively, the main activities that they provide are the Farm Management Information Systems (FMIS) and system and machine installing. As for Ianos, the company provides training to farmers and to UAVs operators and technical assistance.

Main ICT technologies that companies provide can summed up to:

- Low cost agricultural robots, Unmanned Aerial Vehicle Systems
- Unmanned Aircraft Systems and Satellites
- Tensiometer
- Automatic irrigation system
- Intelligent IoT (Internet of Things) technology irrigation system, adapted to a hybrid machine learning approach
- Low cost irrigation system based on wireless sensor network that uses radio frequency communication
- Intelligent irrigation system based on real-time soil moisture data

The main customers of the companies are small (family) enterprises, large agricultural enterprises and cooperatives. The companies are mainly active at national level by 80%, and secondarily at international level by 20%.

All, the three companies reported that the ICT revolution in agriculture has significantly positive impacts to their businesses results.

Table 1. The main factors affecting the sale of new technologies to farmers.

	Factor	1 - most 5 – least important	Reasons
1	High Capital investment	1	NA
2	Return to investment	2	NA
3	Complicated use	3	NA
4	High technical staff required	4	NA
5	Legal problems	5	NA
6	Short life of new technology	6	NA

*NA: NOT ANSWERED

Result 2. Identify and understand current and future suitable technologies for EU precision agricultural farms (Questions in the part "current and future suitable technologies for EU precision agricultural farms", Q11-Q16)

Ionos noted that, the Unmanned Aircraft Systems will be developed by innovative business teams and will be addressed to large producer groups. It also noted that, software for precision irrigation, providing specific advices for irrigation for the all kind of crops is currently suitable technology for EU precision agricultural farms and it will continue be suitable in the future.

Result 3. Technology training programmes on ICT for precision agriculture employees. This part includes two sections 1) Training for clients (farmers), Q17-Q29 and 2) Training for enterprise' employees, Q30-Q43.

Not all the companies provide training programmes on ICT for precision agriculture employees. AGROSTIS, doesn't provide training programmes at the time being. As for the other two companies the kind of training they provide includes:

- Case by case basis
- New product promoting training
- Periodic technical repeated training

Regarding to the areas of training that are lacking the most, it is noted that the main problem is the lack of qualified staff and specialization. As far as the training material for the clients, they suggested the aerial feeding, prevention and control of crops with UAVs for the integration of modern technologies.

Both companies agreed that long term the training programs are profitable for their companies. In more details, Zen Agro ike provides training programmes on client's demand and the duration of them is about 1-2 days. IONOS, provides training programmes every year and the training programs last 3 days up to a week. Both companies undertake the coordination of the trainings themselves ,while the cost is borne by the customer.

All trainings take place at customers' workplaces.

As for the implementation of training on ICT technologies in the future it is reported that a financing and virtual training material are necessary.

Result 4. Financial support programmes for ICT development at suppliers' level Questions from Q44 to Q49.

Zen Agro and Ionos, inform their clients about current programs in order to contact consulting companies. Moreover all companies declared that their enterprises don't get any financial support for new ICT technologies business.

Result 5. National and international legal/regulations/policy on new ICT technologies applied in agro sector. Questions from Q50-Q51.

Conserning the impact of their enterprise by any national/ international/ regulations/ policy to run their businesses on new ICT technologies, both companies gave a positive answer. Morover, Ionos reported that European Legislation must follow the dynamics and capabilities of UAVs. Full integration of UAVs in agricilture, with systematic and lifelong education of all stakeholders

Conclusions:

All three companies are Leaders in the Greek market and they trying to expand their activities to an international level. They cover a wide range of ICT technologies and have in their dynamic expertized staff with a high faith and dedication to the common vision. Their mission is to research and develop innovative approaches to further enhance the benefits of using ICT technologies. For the time being main customers of the companies belongs to cooperatives and large agricultural enterprises. Small farmers are not included maybe due to current national and international legal/ regulations/policy on ICT technologies. However an efford is made by companies themselves to train both their employees and farmers.

Recommendations:

Our recommendation is to propose to these companies to participate in this project in the terms of good practices. In this way a communication channel will be created between farmers and suppliers and secondarily the teaching material of the present project will be optimized.